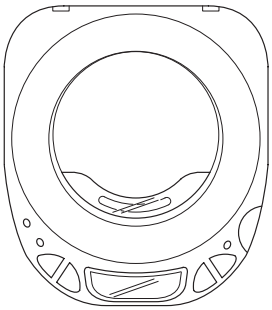
aiwa SERVICE

XP-V311

ALH1(S) ALHB(S)
ALH(LL)



SERVICE MANUAL

COMPACT DISC PLAYER BASIC CD MECHANISM : DA23L

This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-003-339-8T1).

aiwa

S/M Code No. 09-003-339-8R1

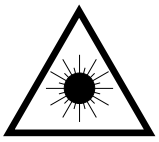
REVISION DATA

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

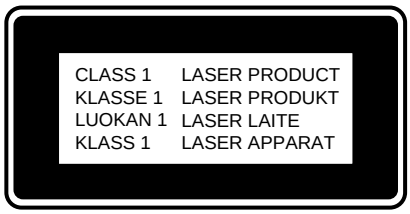
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

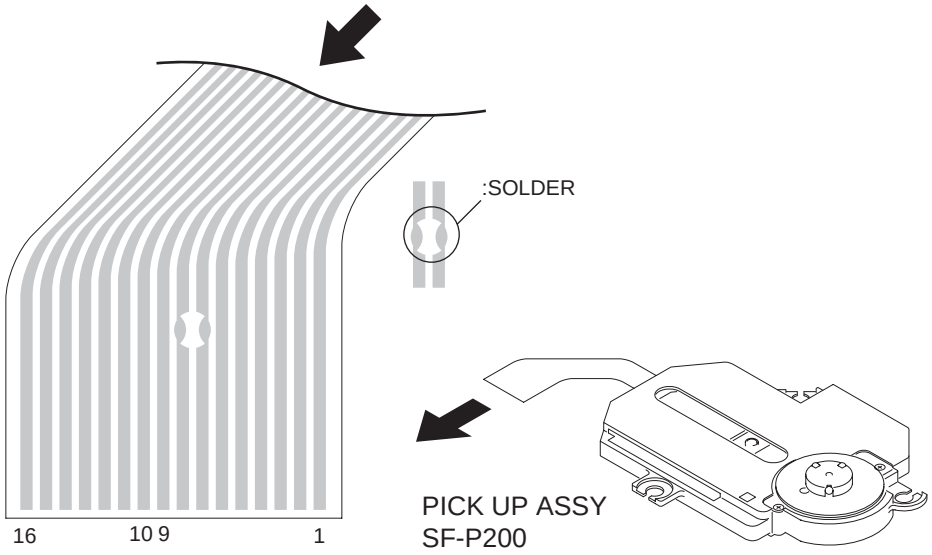
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (SF-P200)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.



SPECIFICATIONS

Tracking system	3-beam laser
Laser pickup	Semiconductor laser
D/A conversion	8-times oversampling digital filter + 1-bit DAC
Frequency response	20 – 20,000 Hz
Output	PHONES/LINE OUT jack (stereo mini-jack)
Maximum output	12 mW + 12 mW (EIAJ 16 ohms at 1 kHz) 500 mV (47 k ohms at 1 kHz)
Power supply	DC 3 V using two LR6 (size AA) alkaline batteries DC 2.4 V using two commercially available rechargeable batteries (Ni-Cd 1.2 V 700 mAh) AC house current using the supplied AC adaptor
Maximum outside dimensions	128 (W) × 28 (H) × 144.5 (D) mm (5 1/8 × 1 1/8 × 5 3/4 in.) (excluding projecting parts and controls)
Weight	Approx. 220g (7.7 oz.) excluding batteries
Accessories	AC adaptor AC-D603 (1) Stereo headphones (1)
«AC Adaptor»	
Rated input	For the customer in Argentina AC-D603 HA: 230 V AC, 50 Hz For the customer except in Argentina AC-D603 HR: 115/230 V AC, switchable, 50/60 Hz

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

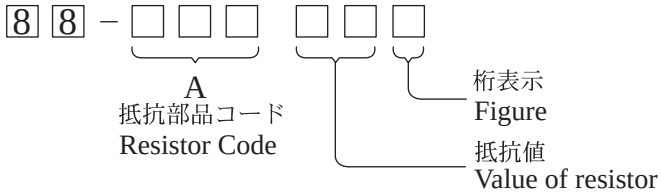
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A21-448-040		C-IC,BH6554FV
	87-A21-083-040		C-IC,BH6508FS
	87-A21-381-040		C-IC,LA9235M
	87-A21-591-010		C-IC,LC78641NE-D
	87-A21-085-040		C-IC,TA2120FN
	8A-HC7-601-010		C-IC,UPD789405AGC-013
TRANSISTOR			
	89-211-323-080		C-TR,2SB1132R
	87-A30-332-040		C-TR,CPH3106
	87-A30-278-040		C-FET,2SK2980
	87-A30-287-040		C-TR,DTC114TKA
	87-A30-246-040		C-TR,2SA1037AK
	86-NFZ-667-040		C-TR,DTC123JKA
	89-416-643-080		C-TR,2SD1664R
	89-324-123-080		C-TR,2SC2412K S
DIODE			
	87-A40-592-040		C-ZENER,HZM11NB2
	87-A40-590-040		C-DIODE,HRW0202A
	87-A40-554-040		C-DIODE,RB491D
	87-A40-469-080		C-DIODE,HSM2838CTR
	87-A40-836-040		C-ZENER,HZM6.2NB1
MAIN C.B			
C101	87-010-553-040		CAP,E 47-16 GAS
C102	87-010-551-040		CAP,E 33-10 GAS
C103	87-A10-505-040		CAP,E 220-6.3 105 SF
C104	87-010-503-040		CAP,E 220-4 GAS
C105	87-010-498-040		CAP,E 10-16 GAS
C106	87-010-502-040		CAP ELECT GAS 100/4
C107	87-010-196-080		CHIP CAPACITOR,0.1-25
C108	87-012-145-080		CAP, CHIP S 270P CH
C109	87-010-198-080		CAP, CHIP 0.022
C110	87-A10-826-080		C-CAP,S 1-10 K B
C111	87-010-196-080		CHIP CAPACITOR,0.1-25
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-A10-826-080		C-CAP,S 1-10 K B
C115	87-010-196-080		CHIP CAPACITOR,0.1-25
C116	87-010-196-080		CHIP CAPACITOR,0.1-25
C117	87-010-196-080		CHIP CAPACITOR,0.1-25
C201	87-A10-505-040		CAP,E 220-6.3 105 SF
C202	87-010-175-080		CAP 560P
C204	87-010-213-080		C-CAP,S 0.015-50 B
C205	87-010-213-080		C-CAP,S 0.015-50 B
C206	87-A10-826-080		C-CAP,S 1-10 K B
C207	87-A10-826-080		C-CAP,S 1-10 K B
C208	87-010-177-080		C-CAP,S 820P-50 SL
C209	87-010-213-080		C-CAP,S 0.015-50 B
C210	87-010-213-080		C-CAP,S 0.015-50 B
C212	87-A10-826-080		C-CAP,S 1-10 K B
C301	87-016-557-040		CAP,E 100-6.3 SF
C302	87-010-502-040		CAP ELECT GAS 100/4
C303	87-016-557-040		CAP,E 100-6.3 SF
C304	87-010-502-040		CAP ELECT GAS 100/4
C305	87-010-501-040		E/CAP GAS 47-4
C306	87-010-196-080		CHIP CAPACITOR,0.1-25
C308	87-010-196-080		CHIP CAPACITOR,0.1-25
C309	87-010-178-080		CHIP CAP 1000P
C311	87-010-318-080		C-CAP,S 47P-50 CH
C313	87-A10-826-080		C-CAP,S 1-10 K B
C314	87-A10-201-080		C-CAP,S0.33-16 KB
C351	87-016-557-040		CAP,E 100-6.3 SF
C352	87-010-503-040		CAP,E 220-4 GAS
C353	87-A10-826-080		C-CAP,S 1-10 K B
C354	87-010-196-080		CHIP CAPACITOR,0.1-25
C355	87-010-312-080		C-CAP,S 15P-50 CH
C356	87-010-312-080		C-CAP,S 15P-50 CH
C357	87-010-196-080		CHIP CAPACITOR,0.1-25
C358	87-010-322-080		C-CAP,S 100P-50 CH
C359	87-A10-369-080		C-CAP,S 0.47-16 K B
C360	87-016-669-080		C-CAP,S 0.1-25 K B
C361	87-010-322-080		C-CAP,S 100P-50 CH
C362	87-016-669-080		C-CAP,S 0.1-25 K B
C363	87-010-197-080		CAP, CHIP 0.01 DM
C364	87-016-369-080		C-CAP,S 0.033-25
C365	87-010-322-080		C-CAP,S 100P-50 CH
C366	87-010-196-080		CHIP CAPACITOR,0.1-25
C367	87-010-175-080		CAP 560P
C368	87-010-196-080		CHIP CAPACITOR,0.1-25
C701	87-010-501-040		E/CAP GAS 47-4
C702	87-010-495-040		CAP,E 2.2-50 GAS
C703	87-010-498-040		CAP,E 10-16 GAS
C704	87-010-503-040		CAP,E 220-4 GAS
C705	87-010-503-040		CAP,E 220-4 GAS
C706	87-010-498-040		CAP,E 10-16 GAS
C707	87-010-501-040		E/CAP GAS 47-4
C708	87-A10-826-080		C-CAP,S 1-10 K B
C709	87-A10-826-080		C-CAP,S 1-10 K B
C710	87-010-175-080		CAP 560P
C711	87-010-175-080		CAP 560P
C712	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C713	87-010-196-080		CHIP CAPACITOR,0.1-25
C714	87-010-196-080		CHIP CAPACITOR,0.1-25
C715	87-010-196-080		CHIP CAPACITOR,0.1-25
C716	87-010-196-080		CHIP CAPACITOR,0.1-25
C717	87-010-196-080		CHIP CAPACITOR,0.1-25
C718	87-010-178-080		CHIP CAP 1000P
C719	87-010-178-080		CHIP CAP 1000P
C801	87-010-501-040		E/CAP GAS 47-4
C802	87-010-196-080		CHIP CAPACITOR,0.1-25
C803	87-010-196-080		CHIP CAPACITOR,0.1-25
C804	87-010-178-080		CHIP CAP 1000P
C805	87-010-322-080		C-CAP,S 100P-50 CH
C806	87-010-319-080		C-CAP,S 56P-50 CH
C807	87-010-319-080		C-CAP,S 56P-50 CH
C808	87-010-196-080		CHIP CAPACITOR,0.1-25
CN201	87-A61-104-010		CONN,16P H WHITE 52089-1610
CN202	87-009-411-010		CONN,6P ZH V
J101	87-A60-421-010		JACK,DC HEC3600 BLK 6
J701	85-HC5-616-010		JACK,3.5 ST W/R GRN
L101	87-A50-574-010		COIL,100UH #7607
L102	87-A50-573-010		COIL,330UH LHL06NB
L301	87-A50-455-080		C-COIL,47UH-FSLB2520
L302	87-A50-501-080		C-COIL,10UH-FSLB2520
L351	87-A50-501-080		C-COIL,10UH-FSLB2520
L801	87-A50-501-080		C-COIL,10UH-FSLB2520
L802	87-A50-455-080		C-COIL,47UH-FSLB2520
LCD101	8A-HC7-602-010		LCD,AHC-7
R105	87-022-355-080		C-RES,S10K-1/10W F
R107	87-022-358-080		C-RES,S 18K-1/10W F
R307	87-022-202-080		C-RES,S33K 1/10WF
R308	87-022-202-080		C-RES,S33K 1/10WF
R309	87-022-202-080		C-RES,S33K 1/10WF
R310	87-022-202-080		C-RES,S33K 1/10WF
R311	87-022-364-080		C-RES,S 82K-1/10W F
R312	87-022-364-080		C-RES,S 82K-1/10W F
S101	87-A90-095-080		SW,TACT EVQ11G04M
S102	87-A90-095-080		SW,TACT EVQ11G04M
S103	87-A90-095-080		SW,TACT EVQ11G04M
S104	87-A90-095-080		SW,TACT EVQ11G04M
S105	87-A90-095-080		SW,TACT EVQ11G04M
S106	87-A90-095-080		SW,TACT EVQ11G04M
S801	87-A91-622-010		SW,MICRO PV1102
S802	87-A91-742-010		SW,SL 4-1-3 HSW2061-010010

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
VR701	87-A90-462-010		VR,RTRY 30KCX2 H RK14J12A0
X351	87-A70-202-080		C-VIB,CER 16.93MHZ CSACV-MXJ04

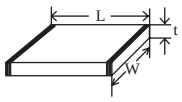
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

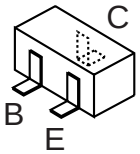
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



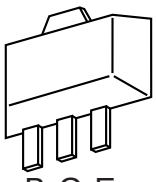
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION

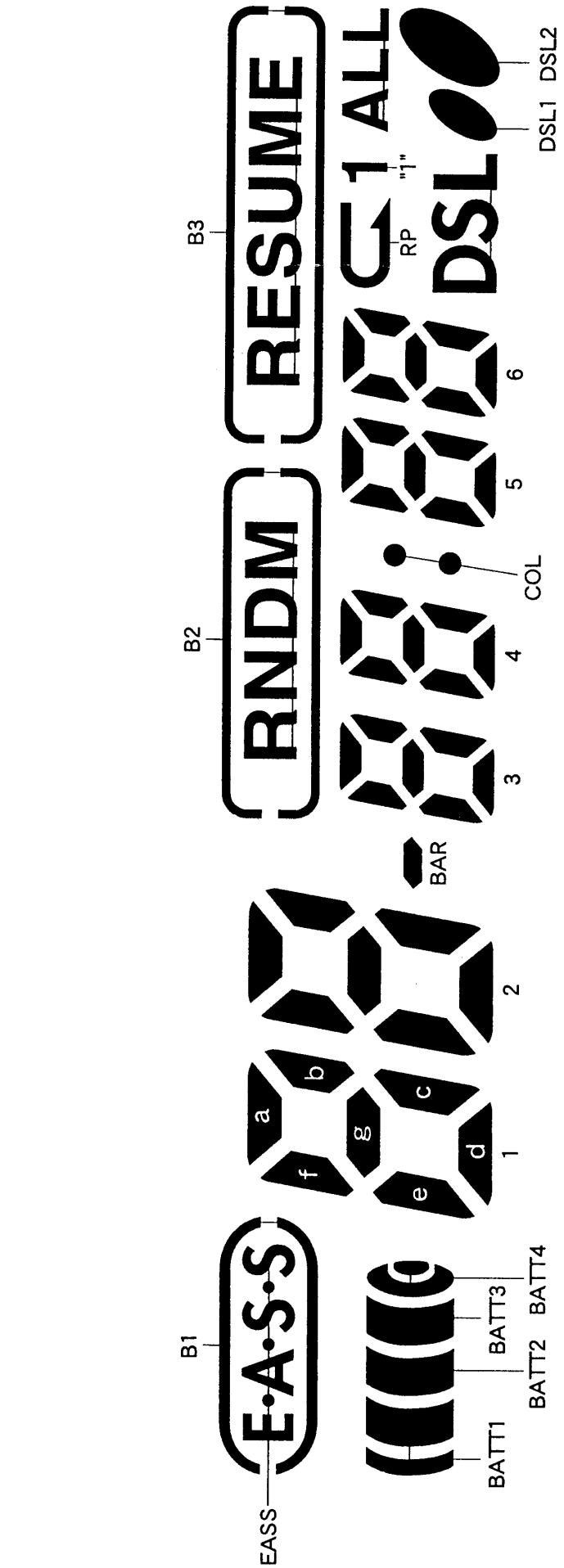


2SA1037
2SC2412
2SK2980
CPH3106
DTC114TK
DTC123JK



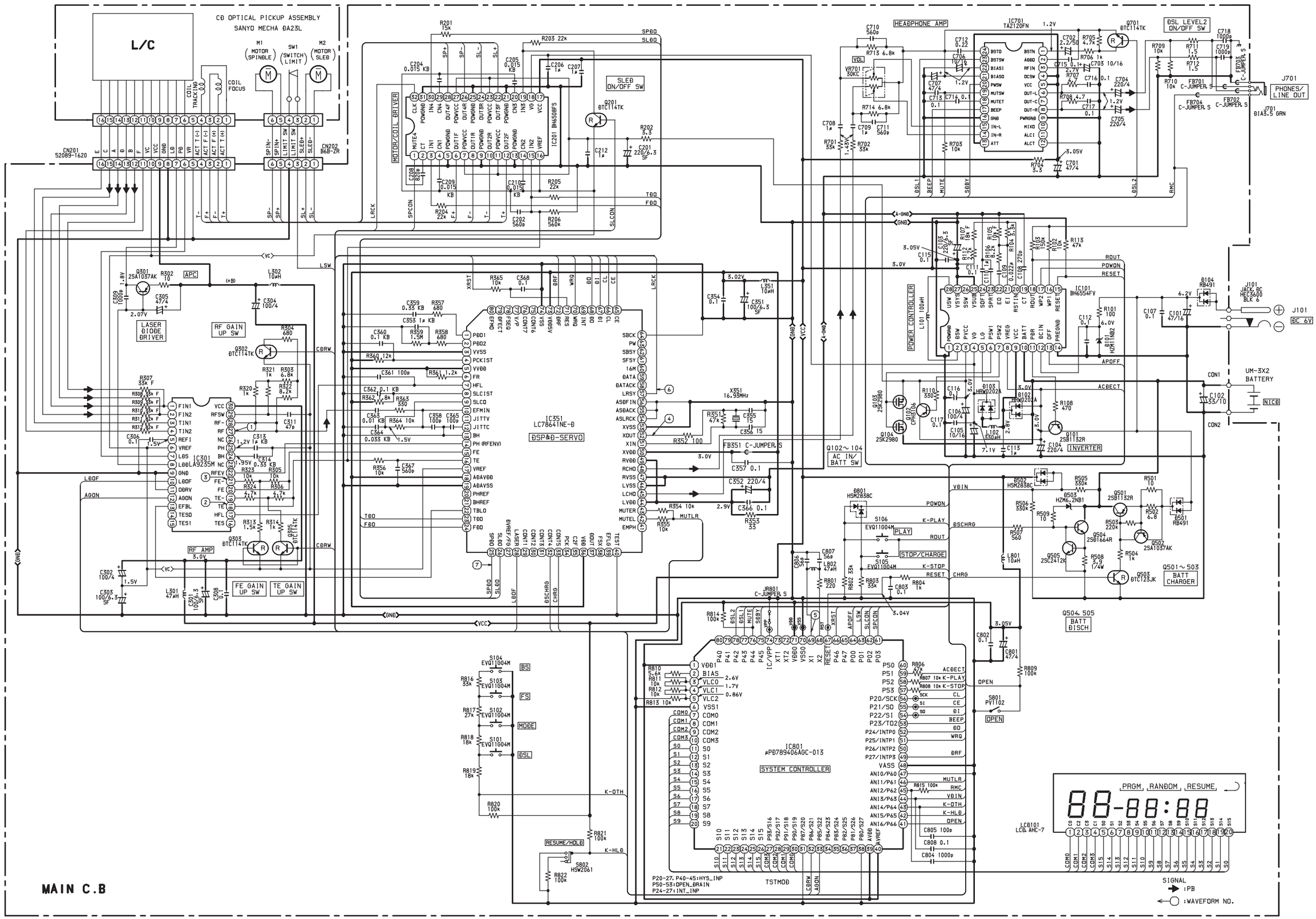
2SB1132
2SD1664

LCD DISPLAY

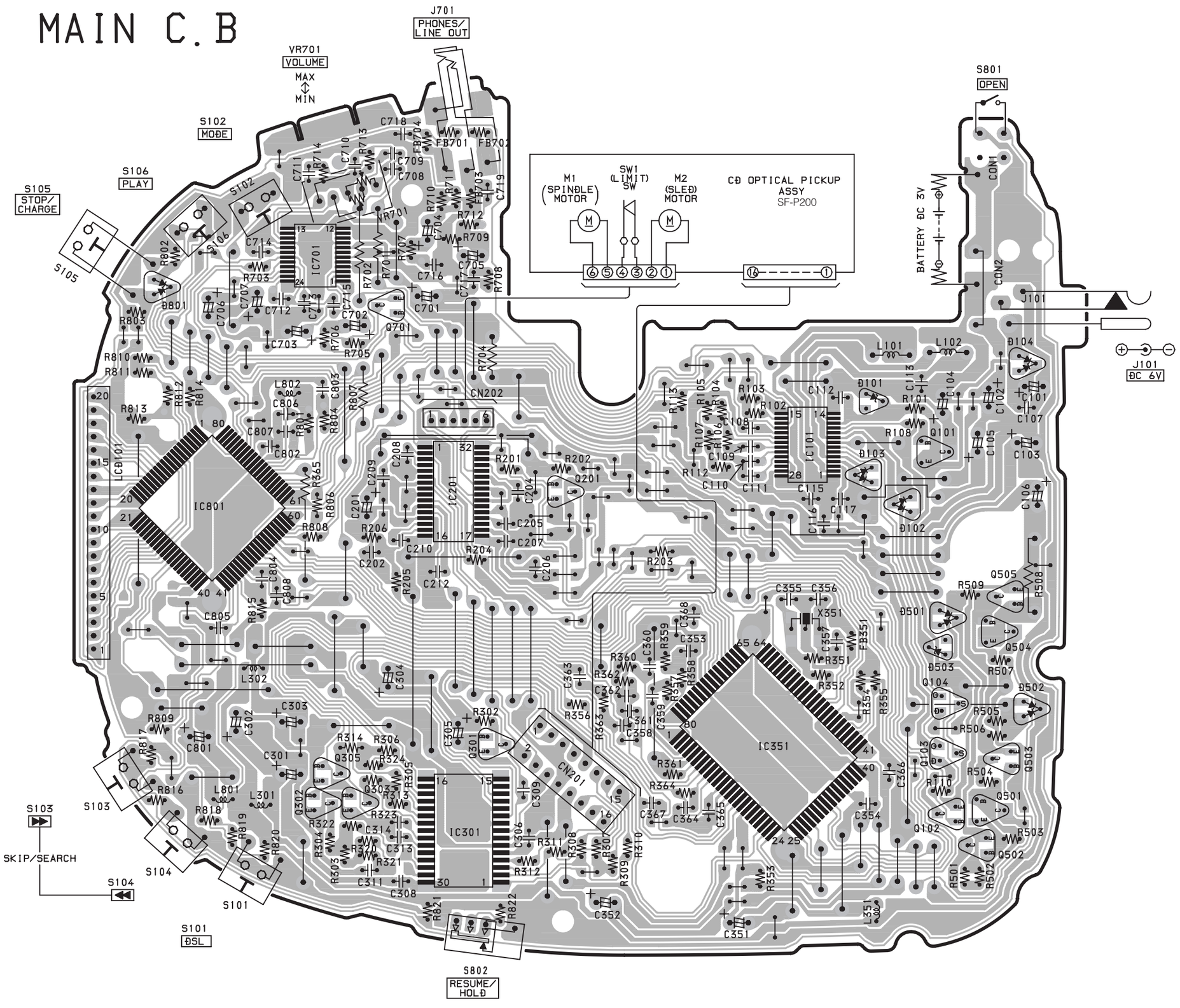


No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COM0	COM0	---	---	---	BATT2	B1	RNDM	1a	---	2a	BAR	3a	---	4a	COL	5a	B2	6a	B3	RESUME
COM1	---	---	---	COM1	BATT1	EASS	1f	1b	2f	2b	3f	3b	4f	4b	5f	5b	6f	6b	"1"	ALL
COM2	---	COM2	---	---	BATT3	---	1e	1g	2e	2g	3e	3g	4e	4g	5e	5g	6e	6g	RP	DSL2
COM3	---	---	COM3	---	BATT4	---	1d	1c	2d	2c	3d	3c	4d	4c	5d	5c	6d	6c	DSL	DSL1

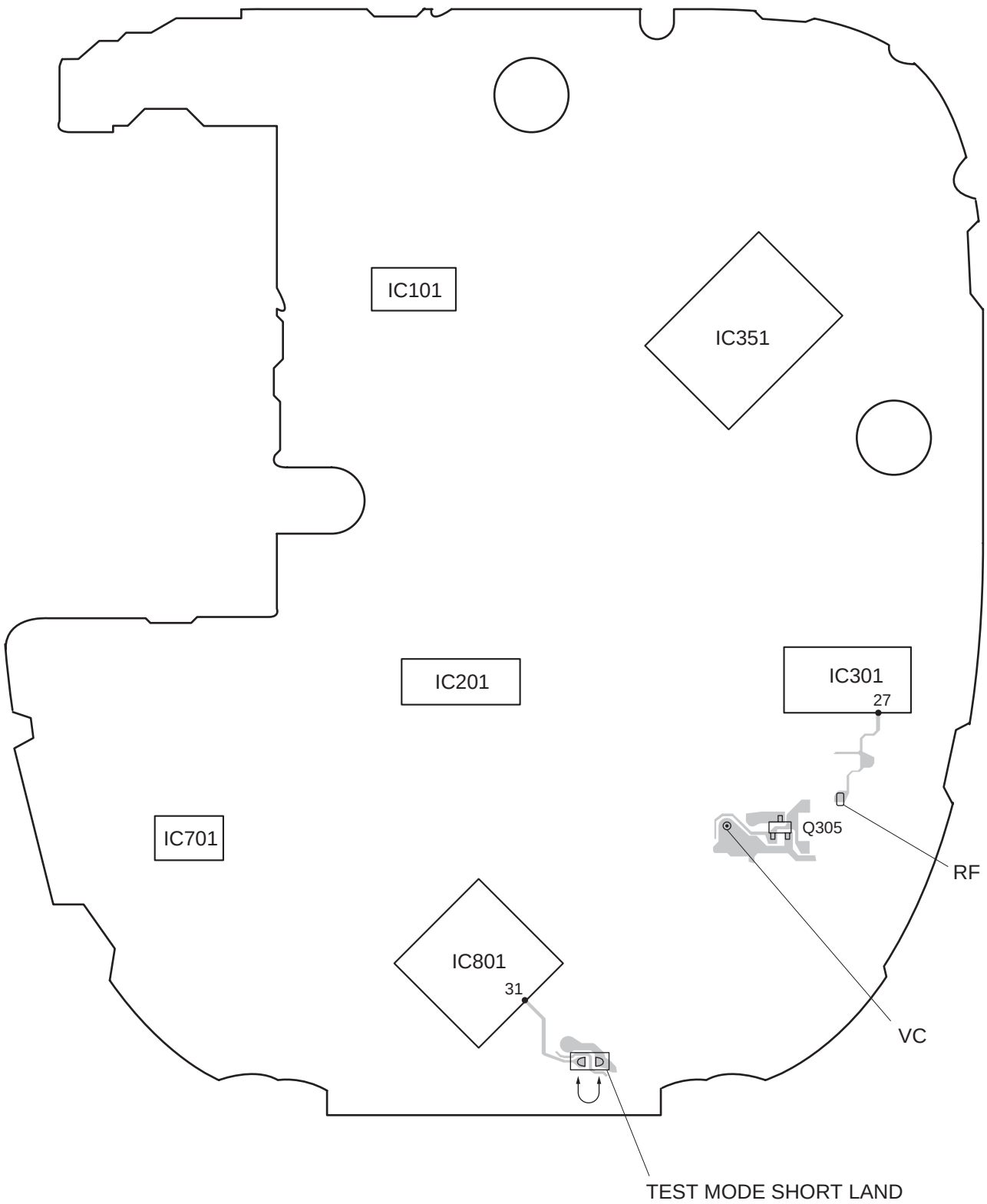
SCHEMATIC DIAGRAM



MAIN C.B


J701
PHONES/
LINE OUT
VR701
VOLUME
MAX
MIN
S102
MODE
S106
PLAY
S105
STOP/
CHARGE
S801
OPEN
CD OPTICAL PICKUP
ASSY
SF-P200
M1
(SPINDLE
MOTOR)
SW1
(LIMIT
SW)
M2
(SLED
MOTOR)
BATTERY DC 3V
CON1
CON2
J101
J101
DC 6V
IC801
IC701
IC201
IC301
IC351
IC101
CN202
CN201
S103
SKIP/SEARCH
S104
S101
S101
DSL
S802
RESUME/
HOLD

TEST MODE


IC101
IC351
IC201
IC301
27
IC701
Q305
RF
IC801
31
VC
TEST MODE SHORT LAND

The servo circuit of this model has been designed to be free of adjustments and controlled within the IC. Therefore, adjustments and disk judgement are performed automatically every time the TOC is read out. The adjustment status of each servo inside the IC can be monitored in this test mode.

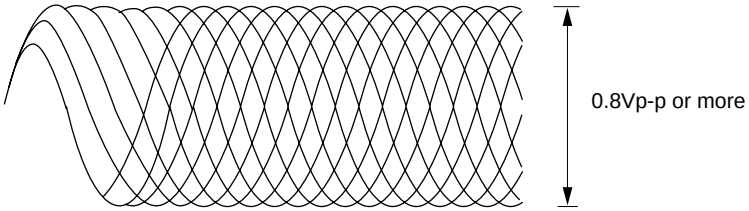
1. Startup procedure

1) Short the test land.
2) Insert the AC plug.
3) Press the STOP button. (The test mode starts.)

Note 1) The test mode is canceled by disconnecting the AC plug.
Note 2) The OPEN/CLOSE switch cannot be operated during the test mode.

2. Checking the RF level

Test point: RF & VC (Vref)
Test disk: TCD-782
Play back the disk and confirm that the RF waveform is in the following state:

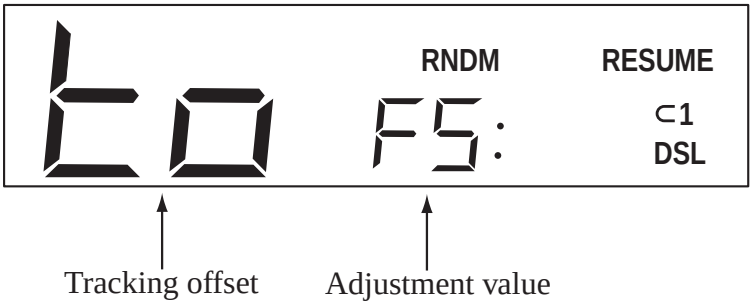


VOLT/DIV:200mV
TIME/DIV:0.5us

3. Checking each servo

The adjustment values of each servo can be checked by pressing the MODE button repeatedly during playback. The switching procedure is as follows.
Check mode OFF→Vref offset (RO)→focus offset (FO)→tracking offset (TO)→tracking balance (TB)→tracking gain (TG)→ focus gain (FG)→focus bias (FB)→check mode OFF

Example: Tracking offset (TO) Adjustment value→F5



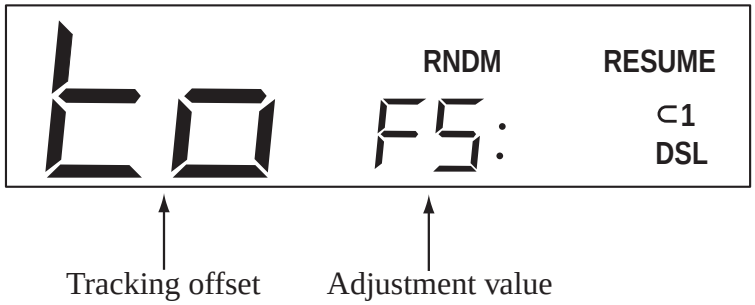
* Adjustment values are indicated in hexadecimal.
When displaying each mode on the LCD and pressing the PLAY button in the STOP status, the center value is displayed on the LCD. After the disk starts rotating, the adjustment value that was set during automatic adjustment is displayed. The display range of the center values and adjustment values of each mode are as follows. There are 256 steps for displaying the values of all modes.

Center value	Center value	Display range
1) Vref offset (RO)	00	80-7F
2) Focus offset (FO)	00	80-7F
3) Tracking offset (TO)	00	80-7F
4) Tracking balance (TB)	80	00-FF
5) Tracking gain (TG)	40	00-FF
6) Focus gain (FG)	40	00-FF
7) Focus bias (FB)	00	80-7F

4. Amount of change of jitter

The amount of change of jitter is displayed in the focus bias check mode. The displayed value has 256 steps from 00 to FF.

Example: focus bias (FB) Adjustment value→00 Jitter value→FD

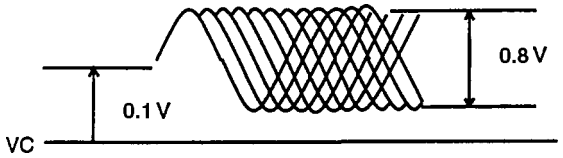


* Adjustment values and jitter values are indicated in hexadecimal.

WAVE FORM

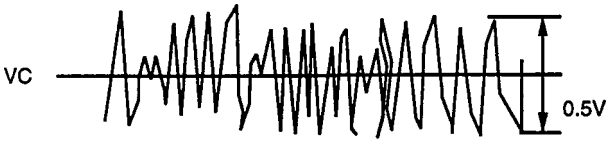
① IC301 Pin ㉗
RF

VOLT/DIV: 0.2V
TIME/DIV: 0.5µS



② IC301 Pin ⑱
TE

VOLT/DIV: 0.2V
TIME/DIV: 50µS

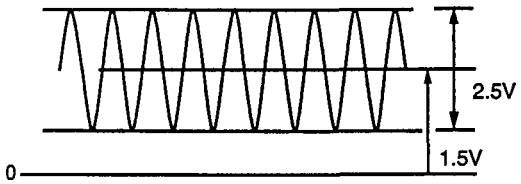


③ IC301 Pin ㉑
FE-

VOLT/DIV: 0.1V
TIME/DIV: 2mS

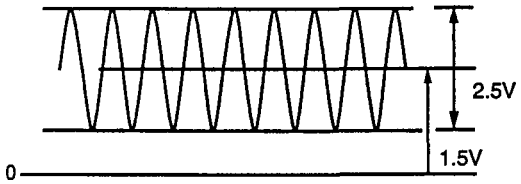
④ IC351 Pin ㊷
XOUT

VOLT/DIV: 1V
TIME/DIV: 50nS
f=16.93MHz



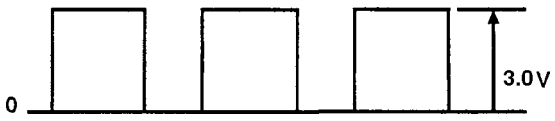
⑤ IC801 Pin ㊾
X1

VOLT/DIV: 1V
TIME/DIV: 0.2µS
f=4.2MHz



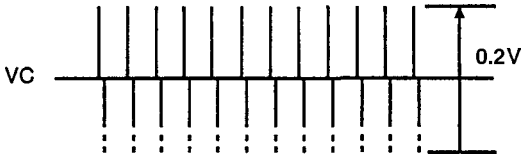
⑥ IC351 Pin ㊼
LRSY

VOLT/DIV: 2V
TIME/DIV: 5µS
f=44.1kHz



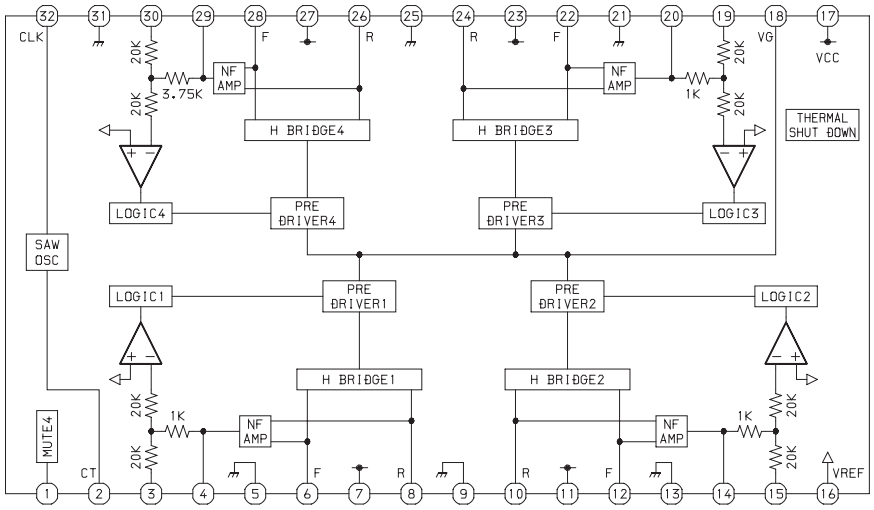
⑦ IC601 Pin ㉕
SPDO

VOLT/DIV: 0.1V
TIME/DIV: 5mS

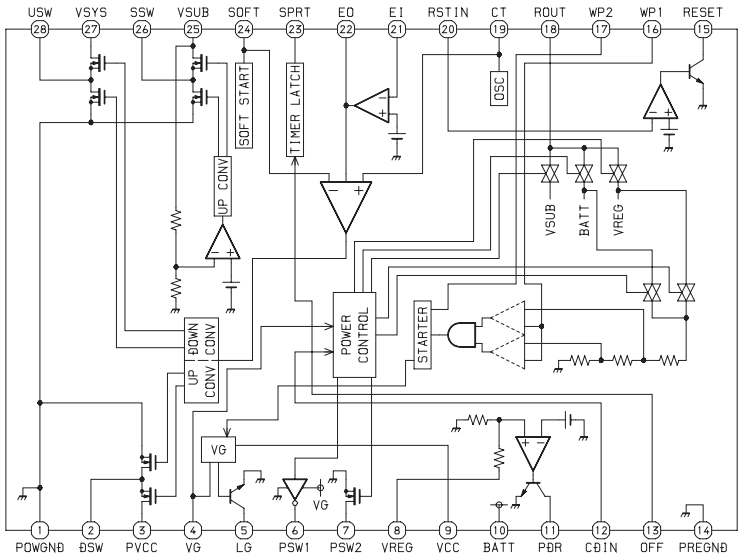


IC BLOCK DIAGRAM

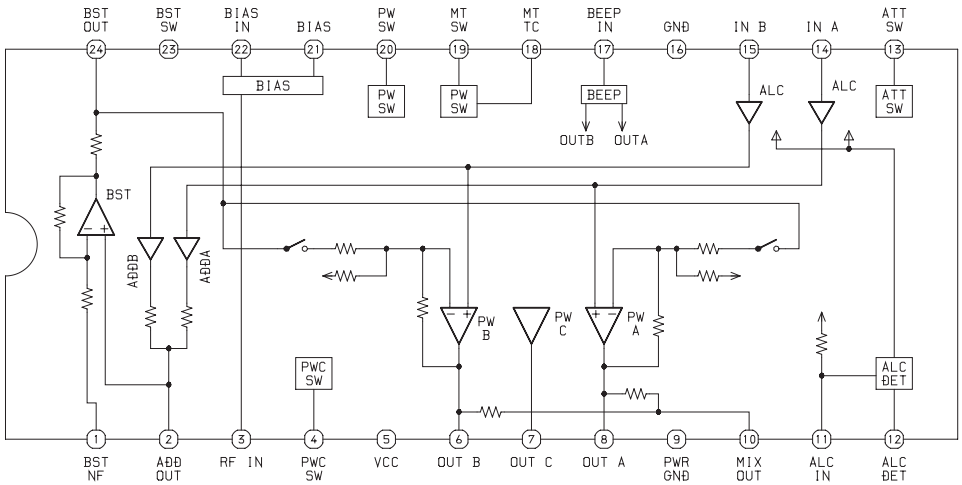
IC, BH6508FS



IC, BH6554FV



IC, TA2120FN



IC DESCRIPTION
IC, LC78641NE-D

Pin No.	Pin Name	I/O	Description
1	PDO1	O	Internal VCD control phase comparator output pin.
2	PDO2	O	Internal VCD control phase comparator output pin. OFF for rough servo, ON for phase servo.
3	VVSS	—	Internal VCD ground pin.
4	PCKIST	I	PDO output current adjustment resistor connection pin. (pull up)
5	VVDD	—	Internal VCD power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
6	FR	I	VCD frequency range adjustment resistor connection pin. (pull up)
7	HFL	I	Mirror detection signal input pin.
8	SLCIST	I	SLCO output current adjustment resistor connection pin. (pull up)
9	SLCO	O	Control outout.
10	EFMIN	I	EFM signal input pin.
11	JITTV	O	Jitter detection monitor pin.
12	JITTC	O	Jitter detection adjustment pin.
13	BH	I	BH signal input pin. A/D input. (Must be connected to OV when unused)
14	PH (RFENV)	I	PH signal or RFENV signal input pin. A/D input.
15	FE	I	FE signal input pin. A/D input.
16	TE	I	TE signal input pin. A/D input.
17	VREF	I	VREF input pin. A/D input.
18	ADAVDD	—	Servo A/D, D/A power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
19	ADAVSS	—	Servo A/D, D/A ground pin.
20	PHREF	O	PH reference output pin. D/A output.
21	BHREF	O	BH reference output pin. D/A output.
22	TBLO	O	Tracking balance output pin. D/A output.
23	TDO	O	Tracking control output pin. D/A output.
24	FDO	O	Focus control output pin. D/A output.
25	SPDO	O	Spindle control output pin. D/A output.
26	SLDO	O	Thread control output pin. D/A output.
27	DVREF/FG	I/O	Output driver VREF output pin. Input FG signal input pin. (Must be connected to OV when unused)
28	LASER	O	Laser ON/OFF control pin.
29	CONT1	I/O	General-purpose input/output pin 1.
30	CONT2	I/O	General-purpose input/output pin 2.
31	CONT3	I/O	General-purpose input/output pin 3.
32	CONT4	I/O	General-purpose input/output pin 4.
33	CONT5	I/O	General-purpose input/output pin 5.
34	PCK	O	EFM data playback clock monitor pin. Average 4.3218MHz when the phase is locked.
35	C2F	O	C2 flag output pin.
36	VDD	—	Digital power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)

Pin No.	Pin Name	I/O	Description
37	DOUT	O	Digital OUT output pin. (EIAJ format)
38	FSX	O	Output pin for the 7.35kHz synchronization signal divided from the crystal osillator.
39	EFLG	O	C1 C2 error correction monitor pin. Test input pin. Must be connected to OV.
40	TEST	I	
41	EMPH	I/O	Emphasis pin. Which becomes an input pin after reset and can becontrolled externally. This becomes an emphasis monitor pin under control by command.
42	MUTEL	O	L channnel mute output pin.
43	MUTER	O	R channel mute output pin.
44	LVDD	—	L channel power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
45	LCHO	O	L channel output pin.
46	LVSS	—	L channel ground pin, Must be connected to 0V.
47	RVSS	—	R channel ground pin, Must be connected to 0V.
48	RCHO	O	R channel output pin.
49	RVDD	—	R channel power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
50	XVDD	—	Crystal oscillator power supply pin. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
51	XIN	I	Connections for a 16.9344MHz crystal oscillator pin.
52	XOUT	O	
53	XVSS	—	Crystal oscillator ground pin. Must be connected to 0V.
54	ASLRCK	I	L/R clock input pin. (Must be connected to 0V when unused)
55	ASDACK	I	Bit clock input pin. (Must be connected to 0V when unused)
56	ASDFIN	I	L/R channel data input pin. (Must be connected to 0V when unused)
57	LRSY	O	L/R clock output pin.
58	DATACK	O	Bit clock output pin.
59	DATA	O	L/R channel data output pin.
60	16M	O	16.9344MHz output pin.
61	SFSY	O	Subcode frame synchronization signal output pin. This signal falls when the subcode is in the standby state.
62	SBSY	O	Subcode clock synchronization signal output pin.
63	PW	O	Subcode P, Q, R, S, T, U and W output pin.
64	SBCK	I	Subcode readout clock input pin.
65	CE	I	Chip enable signal input pin.
66	CL	I	Data transfer clock input pin.
67	DI	I	Data input pin.
68	DO	O	Data output pin.
69	*INT	O	Interruption signal output pin.
70	*WRQ	O	Interruption signal output pin.
71	*RES	I	Reset input pin. This pin must be set low briefly after power is first applied.
72	DRF	O	Focus ON detect pin.

Pin No.	Pin Name	I/O	Description
73	VDD5V	—	Microprocessor interface power supply. (2000pF or more path controller to be inserted at a point nearer to the pin between this pin and GND)
74	VSS	—	Digital ground pin. Must be connected to 0V.
75	CONT6	I/O	General-purpose input/output pin 6.
76	CONT7	I/O	General-pirpose input/output pin 7.
77	V/*P	O	Rough servo/phase control automatic switching monitor output pin. “H” for rough servo and “L” for phase servo.
78	FSEQ	O	Synchronization signal detection output pin. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree.
79	DEFECT	I/O	Defect pin. Which becomes an input pin after reset and can be controlled externally. This becomes the defect monitor pin under control by command.
80	EFMO	O	EFM signal output pin.

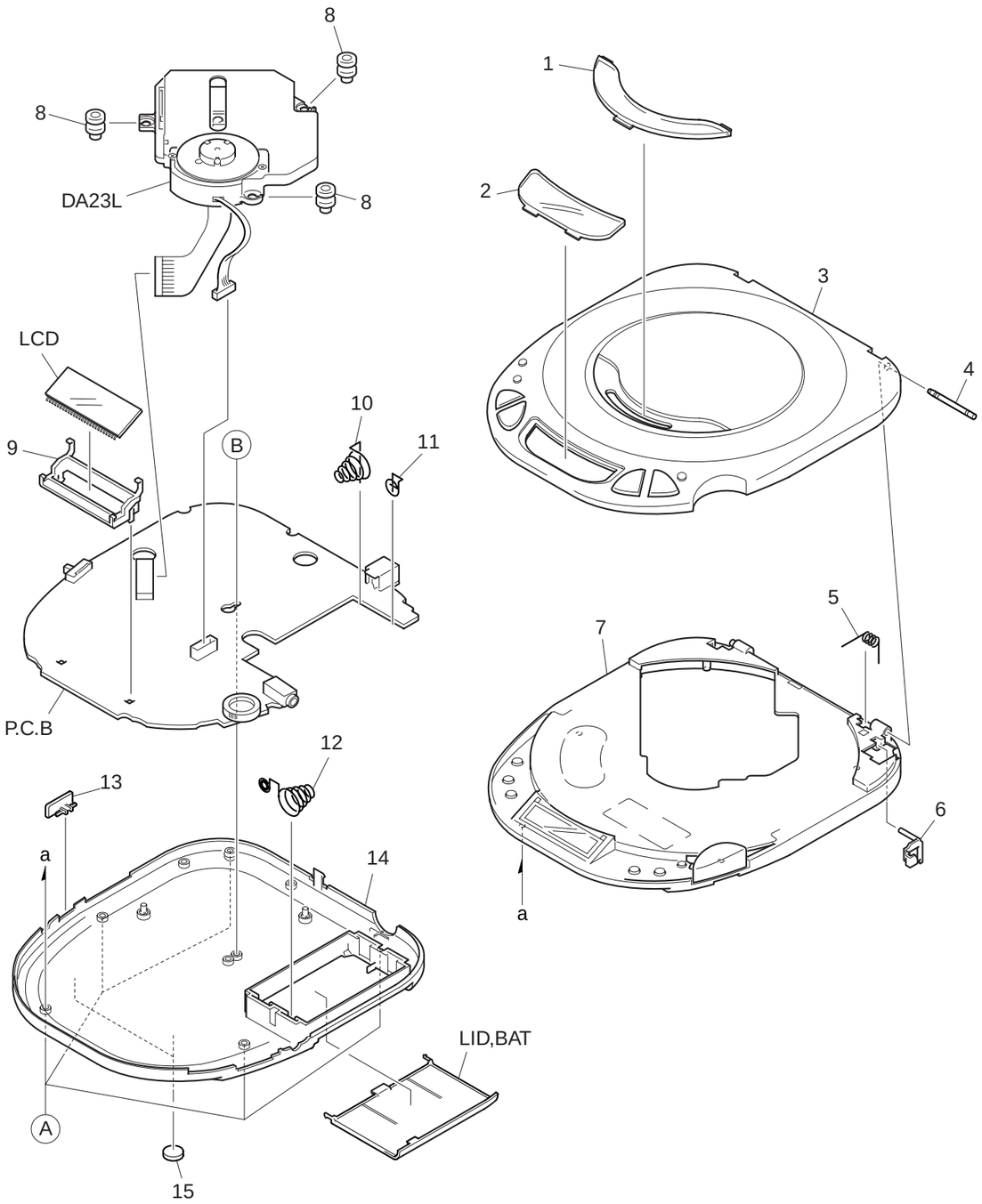
IC, μPD789405AGC-013

Pin No.	Pin Name	I/O	Description
1	VDO1	—	Positive polarity power supply (except for port section).
2	BIAS	—	Feeding the LCD drive power supply voltage.
3-5	VLC0-VLC2	—	LCD drive power supply voltage.
6	VSS1	—	Ground potential (except for port section).
7-10	COM0-COM3	O	Common signal output from LCD controller/driver.
11-38	S0-S27	O	Segment signal output from LCD controller/driver.
39	AVDD	—	A/D comparator analog power supply.
40	AVREF	—	A/D comparator reference voltage.
41-47	ANI6-0	I	Analog input signal to A/D comparator.
48	AVSS	—	A/D comparator ground potential.
49-52	INTP3-INTP0	I	External interrupt input whose effective edge (rise-up or fall-down or both edges of rise-up and fall-down) can be specified.
53	TO2	O	Output signal from 8-bit timer (TM02).
54	SI	I	Serial data input signal of serial interface.
55	SO	O	Serial data output signal of serial interface
56	$\overline{SCK}$	I/O	Serial clock input/output signal of serial interface
57-60	P53-P50	I/O	Port 5. 4-bit N-channel open-drain input/output port. Input or output; can be specified in units of 1 bit. When it is used as an input port, built-in pull-up resistor can be used as specified by mask option.
61-64	P03-P00	I/O	Port0. 4-bit input/output port. Input or output; can be specified in units of 1 bit. When it is used as an input port, built-in pull-up resistor can be used as specified by software
65, 66	P47, P46	I/O	Port 4. 8-bit input/output port. Input or output; can be specified in units of 1 bit. When it is used as an input port, built-in pull-up resistor can be used as specified by software.
67	$\overline{RESET}$	I	System reset input.
68	X2	—	Terminal to connect external crystal for main system clock oscillation.
69	X1	I	
70	VSS0	—	Ground potential of port section.
71	VDD0	—	Positive polarity power supply for port section.
72	XT2	—	Terminal to connect external crystal for sub system clock oscillation.
73	XT1	I	
74	IC/VPP	—	This pin is internally connected. Connect this pin directly to Vss_0 or Vss_1.
75-80	P45-P40	I	Key-return signal detection input signal.

IC, LA9253M

Pin No.	Pin Name	I/O	Description
1	FIN1	I	Pick-up signal input.
2	FIN2	I	
3	TIN1	I	
4	TIN2	I	
5	REF1	I	Pin designed for reference voltage.
6	VREF	O	Reference voltage output.
7	LDS	I	APC monitor voltage input.
8	LDD	O	APC output.
9	GND	—	GND.
10	LDOF	I	laser OFF pin (H: ON L: OFF).
11	ODRV	I	Speed switch pin (H: double L: normal speed).
12	AGON	I	AGC ON pin (H: ON L: OFF).
13	EFBL	I	FE balance adjustment pin.
14	TESO	O	TE signal output for TES.
15	TESI	I	TE input for TES formation.
16	TES	O	TES output.
17	HFL	O	HFL signal output.
18	TE	O	TE signal output.
19	TE-	I	Minus input for TE gain design.
20	FE	O	FE signal output.
21	FE-	I	Minus input for FE gain design.
22	RFEV	O	RF envelop signal output.
23	N/C	—	Pin N/C.
24	BH	I	Capasitance connection pin for RF bottom clamp.
25	PH	I	Capasitance connection pin for RF gain design.
26	N/C	—	Pin N/C.
27	RF	O	RF signal output.
28	RF-	I	Minus input for RF signal gain design.
29	RFSW	I	Switch for equalizer design when RF has double speed.
30	VCC	—	Power supply.

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

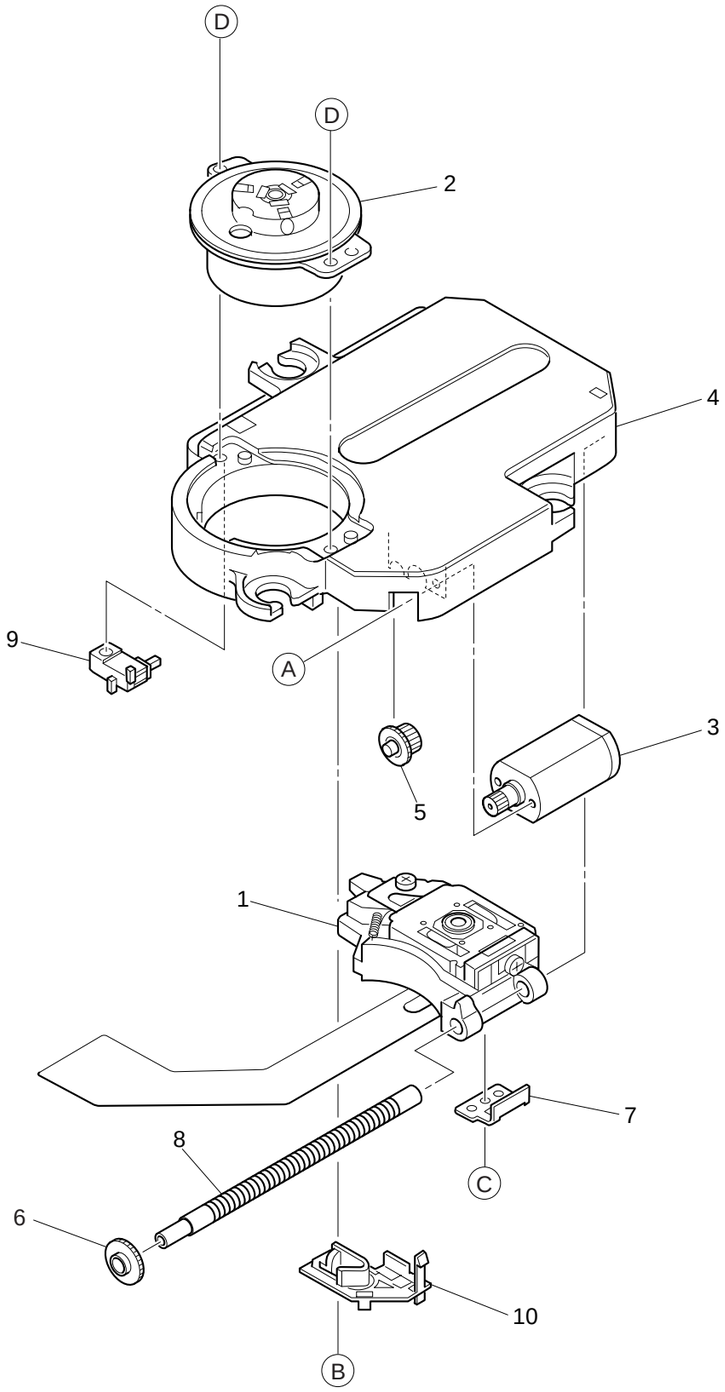
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8A-HC7-007-010		WINDOW,CD
2	8A-HC7-005-010		WINDOW,DISPLAY
3	8A-HC7-040-010		LID ASSY,CD 311<LHB,LHS>
3	8A-HC7-037-010		LID ASSY,CD 311 (LL)<LHLL>
4	85-HC6-205-110		SHAFT,LID(300) HK
5	8A-HC7-204-010		SPR-T,OPEN
6	8A-HC7-018-010		LEVER,OPEN
7	8A-HC7-015-010		CABI ASSY,CENTER<LHB,LHS>
7	8A-HC7-035-010		CABI ASSY,CENTER (LL)<LHLL>
8	8Z-HC1-225-010		DMPR,MECHA(SP)
9	8A-HC7-201-010		GUIDE,LCD
10	8Z-HC7-205-010		BAT-CONTACT,(-)
11	8A-HC7-202-010		BAT-CONTACT,(+)
12	87-HC8-205-010		BAT-CONTACT,(+)(-)
13	8A-HC7-012-010		KNOB,SL HOLD
14	8A-HC7-016-010		CABI ASSY,BOTTOM<LHB,LHS>
14	8A-HC7-036-010		CABI ASSY,BOTTOM (LL)<LHLL>
15	88-HC6-021-010		FOOT, DIA10
A	87-067-869-010		V+1.7-8 HL BLK
B	87-067-868-010		V+1.7-4 HL BLK

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1



CD MECHANISM PARTS LIST

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If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S0-A41-A20-600		PICKUP LASER ASSY
2	SM-10A-108-001		MOTOR ASSY SPINDLE
3	S0-M10-A10-900		MOTOR SLED ASSY
4	S2-311-A12-200		CHASSIS
5	S2-511-A23-200		GEAR MIDDLE
6	S2-511-A23-100		GEAR,SCREW
7	S2-511-A23-400		GEAR,RACK
8	S2-511-A07-900		SPINDLE SCREW
9	S4-S13-A00-200		SW,LEAF
10	S2-451-A18-100		HOLDER GEAR
A	SS-EXE-A04-000		SCR PAN PCS 1.4-2.2
B	SS-GXE-A00-300		SPECIAL SCREW
C	SS-EXE-A14-100		SPECIAL SCREW
D	SS-GXE-A00-202		SPECIAL SCREW M1.7-4.0

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO		PART NO.	KANRI NO.	DESCRIPTION
⚠	1	87-B30-285-010		AC ADAPTOR,AC-D603HRNC
	2	87-B30-326-010		HEADPHONE,HP-M048
	3	8A-HC7-914-010		IB,LH(3L)C F
⚠	4	87-A90-312-010		PLUG,CONVERSION WTN-1157R1

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